

Premature Finality

Applicants respectfully traverse the finality of the current Office Action (mailed August 10, 2000), for the following reasons. In the first Office Action (mailed August 11, 1999), Claims 1-2, 7-8 and 17-22 were examined on the merits. Applicants then filed a Response to that Office Action, which added Claims 25-31. The Examiner subsequently issued an interim Office Action (mailed May 18, 2000), which set forth a restriction requirement between (1) previously-examined Claims 1-2, 7-8 and 17-22, and (2) newly-added Claims 25-31. The restriction requirement inherently included an assertion that these two groups of claims were directed to respective different inventions. In reply to the restriction requirement, Applicants filed a Response electing the invention of Claims 25-31.

As noted above, the first Office Action addressed the merits of the invention recited in Claims 1-2, 7-8 and 17-22. In contrast, the present Office Action (mailed August 10, 2000) addresses the merits of the invention recited in Claims 25-31. Since the restriction requirement takes the position that these are two different inventions, the present Office Action is necessarily the first Office Action on the merits of the invention recited in Claims 25-31. To the extent that the Examiner has maintained the restriction requirement despite Applicants' traverse, and has thus effectively maintained the position that the invention examined in the present Office Action is different from the invention examined in the original Office Action, the present Office Action is necessarily the first Office Action on the merits of the invention of Claims 25-31, and thus cannot properly be a final rejection.

Restriction Requirement

With respect to the restriction requirement set forth in the immediately prior Office Action, the present Office Action indicates that the prior restriction requirement has been reconsidered, and has been maintained and made final. However, for reasons discussed below, it is respectfully submitted that the restriction requirement has not been properly reconsidered.

More specifically, the Examiner states in the present Office Action that the "traversal is on the ground(s) that the grouping of the claims is not consistent with the wording of the claims". Then, the Examiner asserts that this "is not found persuasive because this is not a requirement in giving a restriction requirement". Applicants respectfully disagree, in part because this assertion begs the question. The Examiner asserts that Applicants' only option was to provide "arguments that the product cannot be used in a materially different process", but that position is based on a premise in the restriction requirement, and Applicants have traversed the premise. Under the Examiner's reasoning, it would be possible for the Examiner to define a highly illogical restriction requirement between two groups of apparatus claims, on the ground that they are respectively drawn to an apparatus and a method, and there would be no way for an applicant to traverse this highly illogical restriction. In reality, however, the PTO does permit an applicant to traverse such a highly illogical restriction requirement. With this in mind, Applicants respectfully object to the manner in which the present restriction requirement has been handled in the presently pending Office Action.

In this regard, the reasoning which underlies the restriction requirement in the present application is highly illogical, and Applicants presented an argument to this effect in Applicants' last Response. The Examiner simply ignored this argument, and made no attempt to either correct the problem with the restriction requirement, or to establish that the restriction requirement is actually proper. Consequently, it is respectfully submitted that the Examiner has failed to reconsider the restriction requirement in the manner required by 37 CFR §1.143, including proper consideration of and a proper response to each of the arguments presented by Applicants. Applicants respectfully request proper reconsideration of the restriction requirement, including consideration of and response to each of the several reasons given by Applicants as to why the restriction requirement is believed to be improper.

Withdrawn Claims

Claims 1-2, 7-8, and 17-22 stand withdrawn from further consideration in view of the restriction requirement. In view of the fact that Applicants' prior traverse of the restriction requirement has not been fully and properly considered, Claims 1-2, 7-8 and 17-22 have been maintained in the application. In conjunction with Applicants' above-discussed request that the restriction requirement be withdrawn, Applicants also respectfully request that Claims 1-2, 7-8, and 17-22 be examined on the merits.

The Office Action also indicates that Claim 29 has been withdrawn from further consideration, on the ground that it reads onto the non-elected species of Figure 1. Applicants do not object to the withdrawal of Claim 29 on this basis. However, it is noted that the Office Action goes on to state that the species of Figure 1 has been "abandoned" by Applicants. Applicants respectfully traverse this assertion that the species of Figure 1 has been abandoned. Although a prior election-of-species requirement currently remains in effect, that requirement will be automatically overcome and withdrawn if Applicants are ultimately awarded allowance of a generic claim which encompasses not only the currently elected species of Figure 2, but also the non-elected species of Figure 1. Thus, since Claim 29 depends from independent Claim 25, if independent Claim 25 is ultimately found to be allowable, then Claim 29 will automatically be returned from withdrawn status to active status, and will have to be examined on the merits.

Objection Under 35 U.S.C. § 132

The Office Action raises an objection under 35 U.S.C. §132 to the prior Amendment filed on March 17, 1997, on the ground that the prior Amendment introduces new matter into the disclosure of the present invention. Applicants respectfully traverse this objection, because this problem has already been cured by Applicants. In particular, the attention of the Examiner is directed to the amendments to the specification which are set forth at the top of page 2 of Applicants' prior Response filed September 30, 1999.

In view of this prior correction, it is respectfully submitted that the present objection under 35 U.S.C. § 1.32 is no longer appropriate and should be withdrawn.

✓ Issues Under 35 U.S.C. § 112, Second Paragraph

The Office Action rejected Claims 25 and 30 under the second paragraph of 35 U.S.C. §112 for indefiniteness, indicating that there is no antecedent basis for the term "said voids" in each of these claims. The foregoing amendments add to each of Claims 25 and 30 a proper antecedent basis for this term. These changes are not intended to alter the scope of Claims 25 and 30.

The Office Action also rejected Claim 28 under the second paragraph of §112 for indefiniteness, indicating that the term "said chamber" lacks a proper antecedent basis. The foregoing amendments change the word "chamber" to "cavity" in order to eliminate this problem. This change is not intended to alter the scope of Claim 28.

The Office Action also set forth a further rejection of Claim 25 under the second paragraph of §112 for indefiniteness, indicating that the phrase "enclosure from externally of said enclosure" appears to be grammatically incorrect. However, this phrase does not appear anywhere within Claim 25. It appears to Applicants that the Examiner may have intended to refer to Claim 30, which includes this phrase. Assuming that the rejection was in fact intended to be directed to Claim 30 rather than Claim 25, Applicants respectfully traverse the rejection, because the phrase in question is believed to be grammatically correct.

*(BB)
"from externally"
incorrect*

More specifically, the pertinent portion of Claim 30 includes the phrase "applying heat", followed by two prepositional phrases which respectively specify (1) the structure to which the heat is applied, and (2) the location from which the heat originates. In particular, the first prepositional phrase specifies that the heat is applied "to said highly thermally conductive portion of said enclosure", and the second prepositional phrase specifies that the heat is applied "from externally of said enclosure". With this in mind, it is respectfully submitted that there is no grammatical problem when the indicated phrase is read in the context of the overall clause in which it appears, where the overall

clause recites "applying heat to said highly thermally conductive portion of said enclosure from externally said enclosure". This ground of rejection as to Claim 30 is therefore respectfully traversed, and it is respectfully requested that it be withdrawn.

In view of the foregoing, it is respectfully submitted that Claims 25, 28 and 30 are in compliance with the second paragraph of 35 U.S.C. §112, and notice to that effect is respectfully requested.

Issues under 37 CFR § 1.71, and 35 U.S.C. §112, first paragraph.

The Office Action raises an objection to the specification under 37 CFR § 1.71, on the ground that the originally-filed specification does not disclose the subject matter which is recited in Claims 26, 28, and 31. Further, the Office Action raises a similar rejection under the first paragraph of 35 U.S.C. §112, on the ground that Claims 26, 28 and 31 recite subject matter which is not supported by the disclosure of the originally-filed specification. These grounds of objection and rejection are discussed separately below.

First, as to Claims 26 and 31, the objection and rejection are respectfully traversed. Claims 26 and 31 each specify that the recited phase change material is free of substantial movement within the recited cavity. Applicants respectfully submit that this subject matter was in fact part of the disclosure of the invention as presented in the originally-filed text and drawings. In more detail, and as discussed on pages 7-8 of the present application, the respective embodiments disclosed in Figures 1 and 2 each use paraffin as a phase change material. The specification further discusses that, in these disclosed embodiments, the disclosed phase change material (paraffin) shifts between solid and liquid phases. In addition, the present application indicates that the phase change material can fully fill the available space within the cavity. Persons skilled in the art will readily recognize that the inherent characteristics of paraffin are such that, when it fully fills the space within a cavity and is in a solid phase, there is no appreciable movement of the paraffin within the cavity. Such persons will also readily recognize that, even when that same paraffin changes to its liquid phase, it will be free of any

*melting paraffin
flows within
the cavity:*

substantial movement within the cavity. In fact, persons skilled in the art will recognize from the originally-filed disclosure that no movement of the paraffin within the chamber is needed for proper operation of the disclosed embodiments.

With this in mind, the foregoing amendments add to page 7 of the specification a paragraph which simply states these inherent operational characteristics of the disclosed embodiments and the paraffin therein. It is respectfully submitted that this added paragraph does not introduce any new matter into the disclosure of the invention, because it is merely discussing inherent operational characteristics of structure which was disclosed in the originally-filed application papers. It is thus respectfully submitted that the subject matter of Claims 26 and 31 was in fact supported by the disclosure of the present application as originally filed, even though the basis for the support may not have been as self-evident as might be desirable. It is also respectfully submitted that the paragraph added to page 7 of the specification provides a clearer basis in the specification for the limitations of Claims 26 and 31, without adding any new matter to the disclosure of the invention. For these reasons, it is respectfully requested that the objection and rejection be withdrawn as to Claims 26 and 31. Applicants wish to add that the foregoing discussion of the disclosed embodiments is provided specifically to demonstrate how Claims 26 and 31 are in fact supported by the disclosed embodiments, and is not intended to in any way limit the intended scope of these claims.

Turning to Claim 28, the basis for the objection and rejection is not clear from the portion of the Office Action setting forth the objection/rejection. In a different portion of the Office Action, on page 6, the Examiner suggests that the application discloses fibers extending into a "cavity" rather than a "chamber". This comment on page 6 would appear to relate to the indefiniteness rejection of Claim 28 under the second paragraph of §112, which has been cured by an appropriate amendment to Claim 28, as already discussed above. With respect to the objection and rejection for lack of support, Applicants have carefully reviewed Claim 28. Applicants note that Claim 28 did not expressly state that the fiber portions recited therein are part of the porous material recited in independent Claim 25. The Examiner may thus have felt that the limitations

of Claim 28 presented a problem of double inclusion. Claim 28 has therefore been amended to specify that the previously-recited porous material includes the recited portions of the fibers. This change is not intended to alter in any way the intended scope of Claim 28. In view of this change, it is respectfully submitted that Claim 28 is properly supported by the original disclosure of the invention, and it is therefore respectfully requested that the objection and rejection be withdrawn.

Rejection under 35 U.S.C. §102

Claims 25-27 and 30-31 stand rejected under 35 U.S.C. §102(b) as anticipated by Telkes U.S. Patent No. 2,677,367. This ground of rejection is respectfully traversed, for the following reasons. Independent Claim 25 includes a recitation of "a highly thermally conductive porous material disposed within said cavity and coupled physically and thermally to said highly thermally conductive portion of said enclosure". Similarly, independent Claim 30 recites " a highly thermally conductive porous material . . . which is disposed within a cavity in said enclosure and which is coupled physically and thermally to said highly thermally conductive portion of said enclosure". It is respectfully submitted that the Telkes patent fails to teach or suggest this distinctive feature of the invention.

More specifically, in setting forth the rejection, the Office Action relies on Figure 4 of Telkes. Figure 4 discloses a heat storage unit 12 which stores heat by using a chemical such as disodium orthophosphate to absorb heat as it changes from a solid to a liquid. Telkes uses this chemical due to its high latent heat of fusion. However, when this chemical freezes, it can crystallize into either of least two different hydrates, for example as discussed at line 45 of column 1 in Telkes. For proper operation, it is desirable that the liquid chemical crystallize or freeze as one specific type of hydrate, and to do so predictably. Accordingly, Telkes uses a "crystal promoter" so that the desired hydrate will crystallize, and the undesired hydrates will not. The crystal promoter may be either cellular glass or glass wool, as respectively discussed at line 31 of column 3 and lines 23 and 27 of column 4. The crystal promoter is suspended in the

housing cavity, but is apparently not attached to the walls of the cavity, for example as noted at line 58 of column 3. Telkes does not appear to teach or suggest that either the cellular glass or the glass wool discussed therein is highly thermally conductive. Further, even if either of these materials was thermally conductive, Telkes does not appear to include anything which teaches or suggests that thermal conductivity would be desirable, or lead to any useful benefit. Telkes emphasizes that these components must promote certain crystal growth, not that they must be thermally conductive.

In contrast, Claims 25 and 30 each recite features which are not even remotely disclosed in Telkes, including a porous material which is "highly thermally conductive", and which is "coupled physically and thermally" to a thermally conductive portion of an enclosure. It is therefore respectfully submitted that Telkes does not anticipate the subject matter of Claims 25 and 30 under 35 U.S.C. §102, because Telkes does not disclose each and every element which is recited in these claims. Moreover, the subject matter of Claims 25 and 30 is sufficiently distinct from Telkes that it is respectfully submitted that it would not be an obvious variation of Telkes. Accordingly, it is respectfully submitted that Claims 25 and 30 are each patentably distinct from the Telkes patent, and notice to that effect is respectfully requested.

The Office Action did not use Knoell U.S. Patent No. 5,039,577 to reject any of Claims 25-27 and 30-31. Thus, a detailed discussion of Knoell is not required with respect to these claims. Nevertheless, since Knoell was combined with Telkes for purposes of rejecting one of the dependent claims, a brief comment regarding Knoell is believed appropriate at this point. In this regard, the Knoell patent discloses in Figure 2 an enclosure 10 for an electronic circuit. However, Knoell does not disclose any type of heat exchanger or heat storage unit. Knoell is thus believed to have little relevance to the present invention, and it is respectfully submitted that a person of ordinary skill in the art would have no motivation to attempt to combine the teachings of the Telkes and Knoell patents. Moreover, the Knoell patent does not appear to teach or suggest the provision within the disclosed enclosure of any type of structure, much less a "highly thermally conductive porous material disposed within said cavity and coupled physically and

thermally to said highly thermally conductive portion of said enclosure", as recited in Applicants' Claim 25, or "a highly thermally conductive porous material . . . which is disposed within a cavity in said enclosure and which is coupled physically and thermally to said highly thermally conductive portion of said enclosure", as recited in Applicants' Claim 30. Thus, even if the teachings of Telkes and Knoell were combined, the teachings of Knoell would not cure the deficiencies in the teachings of Telkes with respect to Claims 25 and 30.

Claims 26-27 and Claim 31 respectively depend from Claim 25 and Claim 30, and thus inherently include the above-quoted limitations of Claim 25 and Claim 30. Claims 26-27 and 31 are believed to be patentably distinct from the art of record (including Telkes and Knoell), for example for the same reasons discussed above with respect to Claims 25 and 30.

Rejection Under 35 U.S.C. §103

Claim 28 stands rejected under 35 U.S.C. §103 as obvious in view of a combination of teachings from the Telkes and Knoell patents. Claim 28 depends from Claim 25, and thus includes the limitations from Claim 25 which have been quoted above. Claim 28 is thus believed to be patentably distinct from the combined teachings of Telkes and Knoell for same reasons discussed above with respect to Claim 25.

In addition, there are other reasons why Claim 28 is believed to be distinct from the combined teachings of Telkes and Knoell. For example, Claim 28 recites an enclosure which includes a composite of highly thermally conductive fibers, and in addition recites that the fibers "have portions extending from said matrix into said cavity". In explaining the rejection of Claim 28, the Office Action relies on the Knoell patent for the disclosure of a composite of highly thermally conductive fibers. However, the Office Action does not assert that the fibers of the Knoell composite could have portions extending from the matrix into the cavity. Knoell does not appear to teach or suggest this feature, and it is respectfully submitted that Telkes also fails to teach or suggest this feature. In contrast, as noted above, this feature is expressly recited in

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piecewise

Claim 28 of the present application. It is therefore respectfully suggested that Telkes and Knoell do not, separately or in combination, render obvious the subject matter of Claim 28. Claim 28 is therefore believed to be allowable, and notice to that effect is respectfully requested.

Dependent Claim 29

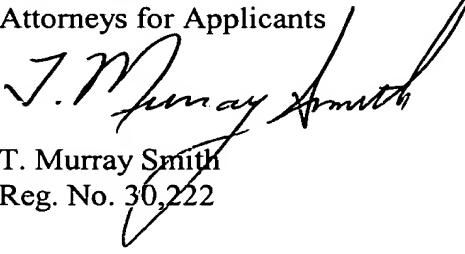
As discussed above, dependent Claim 29 has been withdrawn from consideration as directed to a non-elected species. However, Claim 29 depends from Claim 25, which is believed to be allowable for reasons discussed above. Accordingly, it is respectfully submitted (1) that the allowability of Claim 25 automatically overcomes the prior election-of-species requirement, (2) that Claim 29 is thus subject to active examination, and (3) that Claim 29 is distinct from the art of record, for example for the same reasons discussed above respect to Claim 25.

Conclusion

Based on the foregoing, it is respectfully submitted that all of the pending claims are fully allowable, and favorable reconsideration of this application is therefore respectfully requested. If the Examiner believes that examination of the present application may be advanced in any way by a telephone conference, the Examiner is invited to telephone the undersigned attorney at (214) 953-6684.

Although Applicants believe that no additional fees are due, the Commissioner is hereby authorized to charge any fees required by this paper, or to credit any overpayment, to Deposit Account No. 02-0384 of Baker Botts L.L.P.

Respectfully submitted,
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